



## ILLUMINATING WAVEGUIDE

### ABSTRACT OF THE DISCLOSURE

An illuminating waveguide having first and second longitudinally-extending unitary portions of differing cross-sectional shape. In use, light is injected into the waveguide at, for example, an end face of the waveguide and the light travels along the length of the waveguide with a portion of the light refracting laterally out of the waveguide along some or all of its length. The second cross-sectional shape can be any of a large number of different conical shapes to help direct the internally reflecting light toward the first portion where it can laterally exit the waveguide. The first cross-sectional shape can take a variety of different forms depending upon the illumination and other aesthetic and functional requirements for a particular application. The surface of the first portion can be treated to control the emission of light from that surface. The surface of the second portion can have a reflective coating to enhance the internal reflection of light within the waveguide so that most of the light exits laterally through the surface of the first portion. This results in a waveguide that provides circumferentially-limited lateral light emission along some or all of its length. The waveguide can include longitudinally-extending flanges for mounting of the waveguide. The waveguide so constructed is particularly suited for automotive interior and exterior lighting applications.

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